Adrian C. **Lo**

Neuroscientist
Data Analyst

June 30, 1984 (Belgium)
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About Me

I have a background in theoretical psychology and **statistics**. During the last 5 years I studied and analyzed rodent behavior and molecular biology, but also gained expertise in developing **R programs**, **shiny apps** and **automated reports**. With these tools, I improved the speed and efficiency of data-processing for myself as well as colleagues.

Languages

- Dutch (native)
- English
- French
- Chinese (Cantonese)
- German

Computer Skills

- R
- R Markdown
- Visualization (ggplot2)
- Excel
- Excel (macro and VBA)
- Tableau (BI)
- Machine Learning
- R Shiny
- Git/Github
- SQL
- Python
- HTML
- LaTeX
- SAS

Work Experience

2021 – present — **Clinical Data Manager** — MSD, Switzerland
Review and curation of preclinical trial data

2016 – 2021 — **Neuroscientist** — Université de Lausanne, Switzerland
- Post-doctoral research on the role of RNA binding protein FXR2P in status epilepticus: Behavioral and molecular evaluation (Laboratory of Prof. Claudia Bagni)
- Reference person within the research group on issues related to statistics and programming
- Responsible for the organisation of the departmental stockroom

2014 – 2015 — **Neuroscientist** — KU Leuven, Belgium
Post-doctoral research on cue competition and contextual fear learning in rodents and humans. (Laboratory of Prof. Bram Vervliet)

Education

2008 – 2013	PhD in Psychology	KU Leuven, Belgium
2003 – 2008	Master of Science in Theoretical Psychology	KU Leuven, Belgium

Certificates and Courses

02/2021	Analyzing Data in Tableau	Datacamp
12/2020	Databases and SQL for Data Science	IBM, Coursera
12/2019	Advanced R Shiny	SIB, Switzerland
01/2019	Data Management Plan	SIB, Switzerland
10/2018	Project Management	EPFL, Switzerland
09/2018	Introduction to Data Analysis with Python	EPFL Extension School, Switzerland
06/2018	Statistical Methods for Big Data in Life Sciences and Health with R	SIB, Switzerland
09/2015	Introduction to SAS	LSTAT, Belgium
05/2015	Text Mining with R	KU Leuven, Belgium
09/2013	FELASA C - Laboratory Animal Sciences	KU Leuven, Belgium

My R programs portfolio

meaR (public repository: click here to review it)
The text files from Micro-Electrode Arrays contain *in vitro* electrophysiological measurements interspersed with text. The numeric **data are extracted** from the text file and a master datafile is assembled. meaR then performs calculations for a variety of electrophysiological parameters and visualizes spike and burst activity for all 60 electrodes over time

phenotyper (private repository, available for discussion)
For the processing and analysis of Phenotyper data, we can use a cloud service upon payment. Through **reverse engineering**, I designed the phenotyper program that performs similarly to the cloud service and calculates additional behavioral parameters

easyGeno (private repository, available for discussion)
Mouse genotyping is a tedious process that requires several steps prior to the wet lab work: identification of the sample's model, pre-mix calculations, and planning of the assembly plates for PCR and electrophoresis. These can easily take up to half a day time. With easyGeno, an **automated report** is created with R Markdown that contains all these steps ready for the user to follow and optimized for the QIAxcel apparatus. Finally, I developed a follow-up module that extracts the result from the QIAxcel pdf report and **cross-references with our database file** to automate band identification

unidamr (private repository, available for discussion)
Through an **interactive Shiny application**, behavioral data from *Drosophila* are analyzed, categorized as either sleep or awake state, and several parameters are calculated and analyzed

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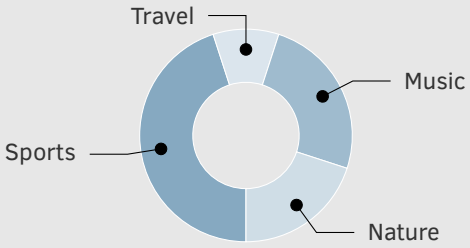
Soft Skills

Extra-Curricular Activities



Driver's license: B (2003)

Teaching Experience

2019-2020 **Coding Club** Université de Lausanne, Switzerland
Interactive course between PhD students and Postdocs on how to use R for data import, manipulation, visualization and analysis

09/2015 **Workshop at Summer School** KU Leuven, Belgium
Subject: "The use of rodent models in fear conditioning, learning and memory

2013 **Bachelor Course at KU Leuven** B-KUL-P0M20B
How to use SPSS for basic data manipulation, statistics and SPSS output interpretation

Conferences and Presentations

2018 **NCCR-SYNAPSY Conference** Geneva, Switzerland
Cognitive flexibility in a mouse model for Fragile X Syndrome

2014 **RIKEN Brain Science Institute** Tokyo, Japan
Treatment with tauroursodeoxycholic acid modulates γ-secretase activity and rescues memory deficits in APP/PS1 mice, an AD mouse model

2012 **International Stockholm/Springfield symposium on advances in Alzheimer's disease** Stockholm, Sweden
Behavioural effects of selenium in mouse models of Alzheimer's disease

2010 **Forum of European Neurosciences** Amsterdam, The Netherlands
Reversible changes in neurocognitive performance and hippocampal synaptic plasticity in tau mutant mouse lines

Publications (6 most recent)

For the full list, please click here

2021 ***BioRxiv***
Scopolamine blocks context-dependent reinstatement of fear responses in rats [doi]
Vercammen, LM, **Lo AC**, D'Hooge R, Vervliet B.
EMBO Reports
Absence of RNA binding protein FXR2P prevents prolonged phase of kainate-induced seizures [doi]
Lo AC, Rajan N, Gastaldo D, Telley T, Hilal ML, Buzzi A, Simonato M, Achsel T, Bagni C.

2019 ***Nature Communications***
The autism- and schizophrenia-associated protein CYFIP1 regulates bilateral brain connectivity and behaviour [doi]
Domínguez-Iturza N, **Lo AC**, Shah D, Armendáriz M, Vannelli A, Mercaldo V, Trusel M, Li KW, Gastaldo D, Santos AR, Callaerts-Vegh Z, D'Hooge R, Mameli M, Van der Linden A, Smit AB, Achsel T, Bagni C.

2017 ***Nature Communications***
The non-coding RNA BC1 regulates experience-dependent structural plasticity and learning [doi]
Briz V, Restivo L, Pasciuto E, Juczewski K, Mercaldo V, **Lo AC**, Baatsen P, Gounko NV, Borreca A, Girardi T, Luca R, Nys J, Poorthuis RB, Mansvelder HD, Fisone G, Ammassari-Teule M, Arckens L, Krieger P, Meredith R, Bagni C.

2014 ***Neuropharmacology***
SSP-002392, a new 5-HT4 receptor agonist, dose-dependently reverses scopolamine-induced learning and memory impairments in C57Bl/6 mice [doi]
Lo AC, De Maeyer JH, Vermaercke B, Callaerts-Vegh Z, Schuurkes JA, D'Hooge R.

2013 ***Science***
Comment on "ApoE-directed therapeutics rapidly clear β-amyloid and reverse deficits in AD mouse models" [doi]
Tesseur I*, **Lo AC***, Roberfroid A, Dietvorst S, Van Broeck B, Borgers M, Gijsen H, Moechars D, Mercken M, Kemp J, D'Hooge R, De Strooper B. * authors contributed equally